AMENDMENT TO THE SPECIFICATION

In paragraph **[0102]** of the specification please amend as follows:

In contrast, FIGURE 35 shows a modified structure 400 in which the coupling device and packaged encoder from the Raab '356 CMM are removed and replaced with encoder disk 96 and end cap 100. Here, two joints are positioned at 90° to each other, each joint having a first housing 420 and a second housing 410. Internal shaft 412 extends from second housing 420 into first housing 410. As shown, encoder disk 96 is attached, e.g., using adhesive, to the end of internal shaft 412 while end cap 100 is fixed within first housing 420. However, it will be understood that encoder disk 96 may be fixed within first housing 420 and end cap 100 be fixed to internal shaft 412 without affecting the operation of the joint.

In paragraph **[0105]** of the specification please amend as follows:

In contrast, FIGURE 36 shows a modified structure 450 in which the packaged encoder and connecting shaft of one joint from the Eaton '148 CMM is removed and replaced by end cap 100 and encoder disk 96. Here a first housing 470 retains end cap 100 and retains internal shaft 462 of second housing 460 by bearings 472. Internal shaft 462 is extended to terminate proximate end cap 100 and encoder disk 96 is attached, e.g., using adhesive, at the end of internal shaft 462. As in the embodiment shown in FIGURE 35, the use of two (or more) read heads significantly reduces the cost and complexity of the joint without sacrificing accuracy.

In paragraph **[0115]** of the specification please amend as follows:

In accordance with another important feature of the present invention, each of the encoders is associated with an individualized identification chip ~~120~~ 121. This chip will identify each individual encoder and therefore will identify each individual bearing/encoder modular cartridge so as to ease and expedite quality control, testing, and repair.

In paragraph **[0134]** of the specification please amend as follows:

With reference to FIGURE 27B, each dual socket joint 46, 48 includes channels such as shown at 190 and 191 in dual socket joint 46 for receiving a respective post 184, 186 or 188. With reference to FIGURE 28, while pins 184, 186 will remain in a fixed position within the appropriate channel or groove of dual socket joint 48, the location of pin 188 may be changed so as to optimize the overall wind-up on spring 110 and provide the most efficient counter balance force. This is accomplished using a threaded hole 192 which receives threaded screw 194. As shown in FIGURE 28, screw 194 may be operated on to contact pin 188 and move pin 188 circumferentially in a clock-wise direction along interior channel ~~196~~ 696 which is shown in FIGURE 27B as being perpendicular to pin access groove 190. Screw 194 is preferably positioned to optimize spring 110 in the factory.

In paragraph **[0145]** of the specification please amend as follows:
It will be appreciated that the modular bearing/transducer cartridge 502 is substantially similar to the cartridges described in detail above and include a rotatable shaft, a pair of bearings on the shaft, an optical encoder disk, at least one and preferably two optical read heads spaced from and in optical communication with the encoder disk and a housing surrounding the bearings, optical encoder disk, read head(s) and at least a portion of the shaft so as to define the discrete modular bearing/transducer cartridge. A circuit board 503 for the encoder electronics resides in an opening ~~504~~ 505 with probe 500. Pairs of take and confirm buttons 504, 506 are positioned on either side of a downwardly projected housing portion 510 of probe 500 with the buttons being connected to an appropriate PC board 512 as in the measurement probe of the FIGURE 29 embodiment. Similarly, an indicator light 513 is positioned between buttons 504, 506 as in the previously discussed embodiments. A pair of threaded openings 514 in housing 510 receive fasteners for removable attachment of handle 508 which provides for ease of rotary manipulation during use of measurement probe 500.

In paragraph **[0147]** of the specification please amend as follows:
Turning now to FIGURES 2-4, 23 and 25, in accordance with an important feature of the present invention, a portable power supply is provided to power CMM 10 thus providing

a fully portable CMM. This is in contrast to prior art CMMs where power supply was based only on an AC cord. In addition, CMM 10 may also be powered directly by an AC cord through an AC/DC adapter via a conventional plug-in socket. As shown in FIGURES 2, 3 and 25, a conventional rechargeable battery (e.g., Li-ion battery) is shown at 22. Battery 22 is mechanically and electrically connected into a conventional battery support 252 which in turn is electrically connected to a conventional power supply and battery recharger circuit component 254 located on circuit board 20. Also communicating with board 20 is an on/off switch 258 (see FIGURE 3) and a high-speed communication port ~~260~~ 259 (preferably a USB port). The joint electronics of arm 14 is connected to board 20 using an RS-485 bus. Battery 22 can be charged on a separate charger, or charged in place in cradle 252 as is commonly found in conventional video cameras. It will be appreciated that portable computer 172 (see FIGURE 2) can operate for several hours on its built-in batteries and/or in the alternative, may be electrically connected to the power supply unit 254 of CMM 10.

In paragraph **[0148]** of the specification please amend as follows:
The on-board power supply/recharger unit in accordance with the present invention is preferably positioned as an integral part of CMM 10 by locating this component as an integral part of base 12 and more specifically as a part of the plastic base housing 26A, B. Note also that preferably, base housing 26A, B includes a small storage area ~~259~~ 260 having a pivotable lid 262 for storing spare batteries, probes, or the like.

In paragraph **[0149]** of the specification please amend as follows:
Turning now to FIGURES 4, 25 and 32-34, the novel magnetic mounting device for use with CMM 10 will now be described. This magnetic mounting device is shown generally at 24 in FIGURES 4, 25, 32 and 33. Magnetic mount 24 includes a cylindrical non-magnetic housing 266 which terminates at its upper end in a threaded section 268. As with all of the preferred threading used in CMM 10, threading 268 is a tapered thread which is intended to be threadingly connected to threading 126 of first long joint 16 as best shown in FIGURE 25. Non-magnetic housing 266 has a substantially cylindrical configuration with the exception of two longitudinal extensions 270, 272 which are

opposed from each other at 180o and extend outwardly and downwardly from housing 266. Attached on either side of longitudinal extensions 270, 272 are a pair of semi-cylindrical housings 274, 276, each of which is formed from a "magnetic" material, that is, a material capable of being magnetized such as iron or magnetic stainless steel. Together, "magnetic" housing halves 274, 276 and longitudinal extensions 270, 272 form an open ended cylindrical enclosure for receiving and housing a magnetic core 278. Magnetic core 278 has an oblong shape with a non-magnetic center 280 sandwiched between a pair of rare earth magnets (e.g., neodymium-iron-boron) 282, 284. An axial opening 286 is provided through non-magnetic center 280. A circular cover plate 288 is positioned beneath magnetic core 278 and located within the lower housing formed by elements 274, 276 and longitudinal extensions 270, 272. A shaft 290 is positioned through a circular opening ~~292~~ 291 in housing 266 and extends downwardly through axial opening 286 of magnetic core 278. Shaft 290 is supported for rotation by an upper bearing 292 and a lower bearing 294. Upper bearing 292 is received by an internal cylindrical recess in housing 266 and lower bearing 294 is received by a similar cylindrical recess in cover plate 288. A lever 296 extends outwardly and perpendicularly from shaft 290 and, as will be described hereafter, provides an on/off mechanism for the magnetic mount 264. Lever 296 extends outwardly of housing 266 through a groove 297 through housing 266 (see FIGURE 25).